PP-75

Different Pest management modules and seasonal incidence of insect pests in the Spring Tomato Ecosystem

Shasta Kalra, Kamaljeet Singh Suri, Dhanwinder Singh, Kirandeep Kaur Deosi
Department of Entomology, Punjab Agricultural University,Ludhiana
Email: shastakalra@yahoo.com

The susceptibility of tomato plants to insects and pathogens can be high, depending upon the pest species, crop stage, growing season and crop location. The investigations on seasonal incidence of insect pests were carried out in three different pest management modules (Organic, IPM and conventional) during three years (2017-2019, January to June) in spring tomato. The data on crop variety, insecticide usage, insect pest incidence and crop yield was recorded weekly. *Aphis gossipii* and *Helicoverpa armigera* were found infesting the crop. The results revealed that the population of aphid initiated in 9th SW in 2017 and in 11th SW in 2018 and 2019. Population of *H. armigera* initiated in 9th SW in 2017 and 14th SW in 2018 and 2019. Among abiotic factors, temperature, rainfall and humidity showed significant effect on the population of aphids and fruit borer build up. The pesticides used by the conventional farmer‘s effectively reduced aphid and fruitborer population as against other modules. Organic fields had significantly more generalist insect predators than conventional fields and IPM fields. Pesticide residue analysis revealed the presence of residues of fertilizers (Mancozeb) and pesticides (Quinalphos, triazophos and chlorpyriphos) in soil and fruit samples. The mean tomato fruit yield obtained from one hectare of land, was maximum in the IPM field followed by conventional and organic field. Soil biological properties showed the presence of higher number of earthworms, fungi and actinomycetes in organic field. Pesticidal contamination in the conventional field soils significantly inhibited the activity of dehydrogenases, urease and alkaline phosphatase. The seasonal incidence of insect pests of tomato will be helpful in preparing proper schedule for effective management of this pest.